



**UNITED STATES DEPARTMENT OF COMMERCE**  
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/221,789	12/28/98	REEH	GR96P1650

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MM92/0215

EXAMINER

JACKSON JR. J

ART UNIT PAPER NUMBER

2815

DATE MAILED: 02/15/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

221789

Applicant(s)

Reeh

Examiner

gg

Group Art Unit

2815

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

## Status

- ☒ Responsive to communication(s) filed on 1/11/01
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-37 is/are pending in the application.
- ☐ Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-37 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_
- ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) 6,9,13
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other \_\_\_\_\_

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1. Upon further consideration of applicant's claims and a new search it has been decided that a new rejection should be applied. Any inconvenience to applicant is regretted.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4,6-9,34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe '230 in view of Pearce '869 and Cox '693.

Abe teaches a visible white light lamp comprising a blue wavelength emitting semiconductor diode and a fluorescent layer which further emits various colors of the spectrum to produce white light. There are terminals connected to the diode to enable voltage bias and consequently blue light emission. The fluophor (luminescence conversion element) converts part of the blue light emission into other wavelengths to produce white light, as is typical in fluorescent type lighting. The fluophor layer 4 of Abe is coated on the glass tube enclosure as a thin layer. It would have been obvious to have practiced a uniformly thin fluor layer, particularly in view of Pearce who shows a similar fluorescent light emission device and shows how to form a uniformly thin fluorescent layer on a glass tube. Likewise Cox shows a fluorescent tube device and provides a uniform coating of fluor material. Such uniformly thick fluor coating is desirable in these devices to produce uniform and bright luminescence. The uniformly thick fluor layer enables a constant path length of light in the fluor, as applicant desires. Accordingly, applicant's claims are

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considered obvious in view of the teachings and suggestions of the prior art. Arguments that the prior art does not teach final light emission of the original wavelength of the led are not persuasive here because Abe teaches polychromatic white light emission which would necessarily include the original wavelength and many others to produce white light. In addition, the physics of the thin film fluor would enable emission of the original blue wavelength because 100 % absorption would not be obtained. Furthermore, white light emission would certainly suggest to one of ordinary skill that the original blue wavelength emission would also be desirable in the final polychromatic white light emission. Claim 1 is clearly obvious structure. Claims 2-4,6-9, and 34-37, are likewise obvious. Claim 7 is obvious because Abe includes uV emission. See column 2.

4. Claims 1-12,34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe with Pearce and Cox and further in view of Tadatsu '609.

Tadatsu shows a similar led with fluor coating. The fluor coating encapsulates a part of the semiconductor body and terminals. From Abe, Pearce and Cox, it would have been obvious to have practiced a uniform coating of fluor encapsulation over the semiconductor body and terminals to provide uniform illumination and brightness. Claims 5, 10 are obvious. Claim 11 is obvious because Tadatsu shows a recess in base 2 and there is fluor encapsulation in the recess. Claim 12 is likewise rejected.

5. Claims 1-13, 34-37, are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe with Pearce, Cox, Tadatsu, and further in view of Thornton '758.

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Thornton teaches multiple uniform layers of phosphor material to reduce costs, etc. It would have been obvious to have provided multiple layers in Abe with Pearce, etc. to improve device design and reduce costs, etc. Applicant's claim 13 is obvious structure.

6. Claims 1-14,34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe, Pearce, Cox, Tadatsu, Thornton, and further in view of Tokailin '214.

Tokailin teaches organic dyes excited by a first emitter to produce white light. It would have been obvious to have practiced organic dyes in Abe with Pearce, etc. to produce a white light emitter because organic dyes are excellent fluorescent centers. Note also that Tokailin teaches and suggests mixing of the first emission with the fluorescent emission to produce white light (Column 17). Applicant's claim 14 is obvious structure. Claim 15 and 16 are also rejected because plastic binders are fundamentally obvious and also shown by Tokailin and Tadatsu.

7. Claims 1-29,34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe with Pearce, Cox, Tadatsu, Thornton, Tokailin and further in view of Mita '881, Chao, and Robbins.

From Mita, Robbins, and Chao it would have been obvious to have practiced inorganic fluor centers because they are shown to work excellently in epoxy based binders. See particularly Mita, column 4. Claims 17-29 are obvious structure. In re claim 19 note Robbins teaches and suggests YAG:Ce. It is a well known fluor. In re claim 22 note Mita teaches 10 micron particles (column 3).

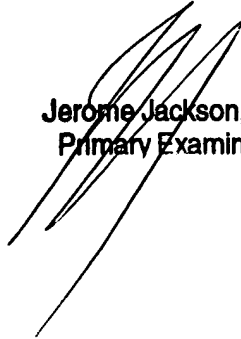
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8. Claims 1-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe with Pearce, Cox, Tadatsu, Thornton, Tokailin, Mita, Chao, Robbins, and further in view of Sato 7/96.

Claims (30-33) reciting obvious use and structure for these fluorescent light emitting devices are obvious in view of the prior art applied above with Sato who teaches practicing such devices as display devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerome Jackson whose telephone number is (703) 308-4937. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Jerome Jackson, Jr.  
Primary Examiner